NOTES ON AUSTRALIAN DIPTERA. XXVIII.

By J. R. Malloch.

(Communicated by Dr. G. A. Waterhouse.)

[Read 29th July, 1931.]

I present in this short paper some data upon the family Rhagionidae which it is hoped will prove of interest to students of geographic distribution, as well as to those who are more directly and exclusively interested in the family systematically.

Suborder Brachycera.

Family Rhagionidae.

This family has generally been referred to under the name Leptidae. Fabricius described *Rhagio* in "Systema Entomologica" in 1775, but rejected it in 1805 because of its similarity to *Rhagium* (Coleoptera), and used instead for the same concept the generic name *Leptis* (Systema Antliatorum). The change was unnecessary, but was followed by all subsequent writers until comparatively recently and even yet the family name Leptidae is in quite general use, but some of the most recent writers have reverted to *Rhagio* with its concomitant change in the family name to Rhagionidae.

I present below a key to the genera of the family recorded from Australia and Tasmania, in which I introduce some additional characters to those generally met with in similar treatments of the family. This action is taken to bring out the relations of the Australian and extralimital genera more clearly than has previously been done, and in the notes on the genera I have attempted to point out the principal distinctions between those known to me and recorded as Australian. I have done similar work in connection with Asilidae and Stratiomyiidae in previous papers and I note that Hardy has dropped the use of the generic name *Deromyia* in the former family in concurrence with my statement that that genus does not occur in Australia. He has also accepted the character of the complete prosternum in the asilid subfamily Laphrinae as the distinguishing character of that group as pointed out in one of my papers in this series.

Key to the Genera.

1. Five complete posterior cells in the wing, media with four complete branches, the fourth emanating from the medio-cubital cross vein (m-cu) or extremely close to the junction of the latter with the discal cell (m c) 2

   Four complete posterior cells in the wing, media with but three complete branches, the third rudimentary or fused with fourth, the latter always emanating from discal cell (m c) very distinctly beyond the point of entry of the medio-cubital cross vein (m-cu) 5

2. Arista with very distinct segmentation under a moderately high magnification (× 34); distance between apices of subcosta (Sc) and first vein (R_1) on the costa not greater than that between the latter and apex of second vein (R_{2+3}), the latter not curved forward at tip, straight or slightly undulated .. *Atherimorpha* White

Arista without evident segmentation under a moderately high magnification (× 34); distance between apices of subcosta and first vein on the costa much greater than that between the latter and apex of second vein, the latter markedly curved forward at apex and sometimes connecting with apex of second vein at its junction with costa 3

3. Eyes haired; fore tibiae with an apical ventral spur ..... *Dasyomma* Macquart
Eyes bare; fore tibiae without an apical ventral spur 4

4. Arista dorsal; hind tibiae with two apical ventral spurs; metapleural hairs confined to the supraspiracular convexity ..... *Atherix* Meigen
Arista apical; hind tibiae with but one apical ventral spur; metapleural hairs extending above the upper level of supraspiracular convexity to lateral angle of scutellum, covering the entire extent of disc and denser above than on the convexity ..... *Chrysopilus* Macquart

5. Third antennal segment with a slender, tapered, unsegmented apical arista or style which is quite variable in length; third branch of media (M_3) frequently represented by a short spur; hind tibiae without apical spurs .... *Spaniopsis* White
Third antennal segment with a stout, untapered, apical four-segmented process; third branch of media fused with fourth; hind tibiae with two short spurs ..... *Austroleptis* Hardy

Genus Atherix Meigen.

This genus is included on the basis of *Atherix pusilla* Macquart which has not been recorded since its original description and may not belong to this genus. For reference of this and other species in this paper see Hardy's paper on the family (*Papers and Proc. Roy. Soc. Tasmania*, 1919, p. 117).

Genus Spaniopsis White.

All the species of this genus are recorded as blood-suckers, and in addition to having this habit in common with Tabanidae they quite closely resemble small tabanids in general habitus, being much more robust than the general run of species in this family, the figures given by Ferguson in his paper on the genus (*Journ. Proc. Roy. Soc. N.S.W.*, xlix, 1915, Pl. 26) reminding one very forcibly of the genus *Haematopota* Meigen.

In structure the genus may at once be distinguished from Tabanidae by the lack of well-defined segmentation of the composite third antennal segment which terminates in a style of variable length, and the large alar and rudimentary thoracic squama. In Tabanidae the slender apical portion of the third antennal segment is distinctly annulated, and the thoracic squama projects distinctly beyond the alar one. This squamal distinction is reliable as a criterion for the separation of the two families where the apical portion of the third antennal segment is distinctly segmented in certain leptid genera.

Spaniopsis clelandi Ferguson.

In this species the following characters are present, but without access to the other species I can not say which hold throughout the genus. Upper two-thirds or more of the frons densely haired; basal segment of antennae and the entire face bare, propleura and posterior portion of mesopleura haired, remainder of pleura and the thoracic sternum bare. In the specimens before me I can detect no segmentation of the slender apical process of the third antennal segment, although Hardy calls it a "thickened jointed appendage."

Four females, Blue Mts., N.S.W., 30.3.1910 (W. W. Froggatt). United States National Museum. There is no reference to the specimens biting on the label, but the letter covering their submission to Coquillett is not available, so I am unaware of the circumstances surrounding the sending.

Spaniopsis longicornis Ferguson.

This species differs from the foregoing one in having the antennae very much longer, the third segment being distinctly longer than the head, with the slender portion about seven times as long as the basal width of the segment. In addition the sternopleura has some hairs on the upper portion which I can not detect in any of my specimens of *clelandi*, and the hairs on the posterior margin of the mesopleura are confined to the small isolated sclerite at the upper posterior angle instead of being scattered along the entire hind margin.

Seven females, Mittagong, N.S.W., 8.5.1901 (W. W. Froggatt). United States National Museum. No data as to whether these specimens were biting is given on labels.

Genus Dasyomma Macquart.

This genus has been recorded from Tasmania by Hardy (*Pap. Proc. Roy. Soc. Tasm.*, 1919, p. 123). I have examined four South American species of the genus, including the genotype, and present the following notes thereon so that the generic status of the Tasmanian species may be checked by anyone having such available. The hairing of the pleural sclerites is, in my opinion, of considerable importance in limiting the genera in this family and it is to this character that I would direct attention at this time. About the only references in the literature of the family to this character are some of quite indefinite nature by Leonard in his revision of the North American, and by Bezzi in his paper on South African Rhagionidae. Hardy makes no mention of the character in any of his papers on the family.

The South American species of the genus have the third antennal segment much less elongate, or pyriform, than shown in Hardy's Figure 6 of the paper above referred to, and almost identical with his Figure 3 representing the antenna of *Chrysopilus*. The arista is not noticeably segmented, and the face is bare. Propleura, hind portion of mesopleura, and the metapleural convexity, haired, the other portions of the pleura bare. Second wing-vein ending in or very close to apex of first on costa, third vein (R_{4+5}) haired above to its furcation or beyond it; five posterior cells present, all open; anal cell open, or closed just at margin of the wing. Fore tibia with one, mid and hind tibiae each with two apical ventral spurs.

It may be pertinent to note that *Trichopalpus* Philippi is a synonym of *Dasyomma*, and that Hunter in 1901 proposed to substitute *Trichopalpomyia* for the former which was preoccupied by *Trichopalpus* Rondani in Diptera. Also that *Dasyomma obscurus* Philippi has been recorded as a blood-sucker.

Genus Atherimorpha White.

This genus was originally described from Tasmania, and has been recorded from Australia and South Africa. The latter record, by Bezzi, is rather doubtful, but without an examination of his species it is impossible to give a definite decision as to its generic status.

Before me there are four males of a species from Molong, N.S.W. (Froggatt) that differ from the genotype in having the eyes closely contiguous on the front and possibly they belong to *occidens* Hardy, which was very briefly described as a subspecies of *vernalis* White in the paper already referred to (Hardy, *l.c.* p. 126). Apart from noting that all four specimens are uniform in colour and markings as well as in structure, and that they impress me as likely to prove specifically

distinct from *vernalis*, I do not plan to go, because of lack of other material for comparison, but I have also before me several specimens of a Chilean species which agrees very closely with the Australian one and present some notes on the similarities and distinctions below. The South American species belonging to this group are already described, but they have been placed in the genus *Leptis* (= *Rhagio*).

Both groups are distinguished from *Rhagio* by the segmented arista, five segments being generally evident, the entirely bare face, the longer second wing-vein which enters the costa as far beyond the tip of the first vein as the tip of the latter is from the tip of the subcosta, and the continuation as a linear series of the long bristly hairs on the metapleural convexity up to almost the anterior lateral edge of the scutellum. In *Rhagio* these hairs are confined to the convexity, while in *Chrysopilus* they cover almost the entire metapleura above the level of the bases of the halteres. In the above features the two groups agree, as well as in having the mesopleura and pteropleura bare, and the sternopleura haired below only, but the Australian examples have some setulose hairs on the posterior portion of the postalar declivity just in front of the lateral angle of the scutellum, which are entirely lacking in the South American forms.

The preponderance of similarities in characters over the dissimilarities would suggest the advisability of placing the two groups in one genus, but a division into two subgenera, and for the South American segregate I propose the subgenus *Philippoleptis*, with the type *Leptis praefica* Philippi.

Genus Chrysopilus Macquart.

I have not seen any Australian representative of this genus but have seen several from the East Indies, including also one from Aru Island. Bezzi has recorded *coeruleothorax* Linder from the Fiji Islands.

Hardy has placed the two species described by White as synonyms of *aequalis* Walker, but I rather fear that this may be erroneous, as the genus is one in which the colour characters have to be depended upon largely for specific distinctions, and in other faunal regions than Australia these are quite stable and dependable for that purpose.